

REMARKS

In the outstanding office action, claims 1 and 17-23 were presented for examination. Claims 1, 17-21, and 23 were rejected under 35 U.S.C. § 112. Claims 1, 20, and 21 were rejected under 35 U.S.C. § 102(b) in view of United States Patent No. 3,161,090 issued to McLellan, claims 1 and 17-21 were rejected under 35 U.S.C. § 102(b) in view of United States Patent No. 5,737,981 issued to Hildebrand, and claim 22 was rejected under 35 U.S.C. § 103(a) as being unpatentable over McLellan or Hildrebrand in view of United States Patent No. 6,182,537 issued to Vasichet et al.

Claim Amendments

By the above amendment, applicant has amended the claims merely to clarify and to make explicit that which was implicit in the claims. More specifically, the preamble of claim 1 has been amended to insert “from an engine cylinder” after –spark plug– on line 1 to specify that each spark plug to which a specific embodiment of the invention relates has been configured to have a specified size and shape for a specific engine cylinder. The original application makes clear, on p. 7, ll. 29-30, and p. 8, ll. 1-4, that each embodiment of the claimed tool is configured to be used on a spark plug having a specified size and shape: “[T]he tool 10 may be made in various sizes to adapt to the confined spaces encountered in various cylinder [] spark [] plug configurations. It is also contemplated and foreseeable that tools 10, 10’ of various sizes and shapes may be assembled and sold as a kit. Such a kit may be particularly useful to one who regularly works on a variety of cars, such as a professional auto mechanic, or the like.” Therefore, this amendment adds no new matter and merely makes explicit that which was implicit in the claim, and it is respectfully submitted that the aforementioned amendments be entered.

Claim 1 has also been amended to insert “in the first direction” after –extending– on line 6. This amendment clarifies the direction of the length of the aperture of the claimed invention. Because this amendment merely clarifies claim language without altering the substance of the claims, it is respectfully submitted that no new matter has been added and that the instant amendment merely makes explicit that which was implicit in claims.

Claim 20 has been amended to insert “configured to be driven onto the body of

the damaged spark plug” after –spline portion– on line 2. As depicted in Figures 3A and 3B and recited on p. 4, ll. 27-29, of the application, “to remove a plug 11, the tool 10 is driven onto the body 34 (for example, by light hammer blows) of the broken plug 11, the force causing the apexes 18 [of the splines 16] to cut into the plug’s body 34 and create a new gripping surface 24.” Therefore, it is respectfully submitted that this amendment adds no new matter and merely makes explicit the implicit application of the tool of the invention of claim 20.

The preamble of claim 22 has also been amended to insert “in the first direction” after –extending– on line 4 to clarify the direction of the length of the aperture of the tool used in the method of claim 22. Because this amendment merely clarifies claim language without altering the substance of the claims, it is respectfully submitted that no new matter has been added and that the instant amendment merely makes explicit that which was implicit in claims.

§ 112 Rejections

“[N]ewly added claim limitations may be supported in the specification through express, implicit, or inherent disclosure.” MPEP 2163. Additionally, “information contained in any one of the specification, claims or drawings of the application as filed may be added to any other part of the application without introducing new matter,” MPEP 2163.06, and “drawings alone may provide a ‘written description’ of an invention as required by Sec. § 112.” MPEP 2163 (quoting *Vas-Cath, Inc. v. Mahurkar*, 935 F.2d 1555, 1565, (Fed. Cir. 1991)).

In light of both the specification and drawings provided with the original application, it is respectfully submitted that the original application discloses a plug which possesses a measurable distance between an electrical connector end and a damaged wrench-engaging member, that the tool of the claimed invention possesses an aperture having a measurable length, and that a skilled artisan clearly would have understood the inventor to have an awareness of the existence of a tool of the invention having such an aperture length greater than or equal to the distance along the length of the spark plug between an electrical connector end and a damaged wrench-engaging member.

“[A] distance from the electrical connector end to the damaged wrench-engaging member” is an inherent quality of the spark plugs described by the original application. On p. 4,

ll. 6-12, the original application discloses that “[a] spark[] plug 11[] has an electrode end 26 and an electrical connector end 28. Adjacent to the electrical connector end 28 is an insulator 30, and the wrench-engaging member 32. The spark[] plug 11[] further includes a body 34 adjacent to the wrench-engaging member 32....Adjacent to the body 34 is a threaded region 36, followed by an electrode end 26.” In addition, Figures 5 and 6 of the original application each depict a spark plug having an electrode end 26 and a wrench-engaging member 32 discernibly separated by an inherent, measurable distance.

The disclosure of the original application also presents a tool of the claimed invention possessing an aperture having a measurable length. According to pp. 3-4, ll. 30-1, of the application, “[t]he tool [of the present invention] 10 is adapted to matingly engage a spark plug 11.” The application, on p. 4, line 25, further specifies that the plug-receiving end 12 of the tool has an interior surface. Thus, by describing a tool that is “adapted to matingly engage” and having “an interior surface,” the original disclosure clearly describes the claimed tool as having an aperture. Further, Figures 1A, 2A, 3B, and 4B all depict embodiments of the tool of claim 1 having such an aperture, and it is apparent from the figures that an aperture of the invention inherently possesses a measurable length.

The original application reveals that the inventor had an awareness of the existence of a tool of the invention having such an aperture length greater than or equal to the distance between an electrical connector end and a damaged wrench-engaging member of a spark plug. The application provides, on p. 3, ll. 24-27, that “embodiments of the tool of the present invention facilitate the removal of a spark[] plug from a cylinder head when the wrench-engaging member...on the outside of the spark-plug has been damaged or broken off altogether.” (Emphasis added.) This description, listing some potential uses in the alternative, clearly indicates that a tool of the claimed invention may be used to remove a spark plug that has retained its original length and which has a damaged or broken wrench-engaging member. The application, on p. 1, ll. 22-23, supplies an example of damage to the wrench-engaging member of a spark plug that does not involve the wrench-engaging member having broken off altogether: “[I]f increased removal torque stress that exceed the decreased strength of the spark plug body, the hex flats may shear off.” Removal of such a spark plug that has been damaged but not broken necessarily requires that the claimed tool have an aperture length greater than or equal to

the distance between the electrical connector end and the damaged wrench-engaging member of the spark plug.

This inherent quality of the claimed invention is further supported by the specification and drawings of the original application. According to pp. 3-4, ll. 30-2, “[t]he tool 10 is adapted to matingly engage a spark plug 11, including one have a damaged or missing wrench-engaging member (see Figs. 5 and 6).” (Emphasis added.) Both figures referenced in this portion of the application depict a spark plug having a body that is not broken. These damaged spark plugs, as depicted, retain the distance from their electrical connector ends to their damaged wrench-engaging members. On p. 2, ll. 13-15, the application states that “[t]he tool further includes an end opposed to the plug engaging and adapted to be matingly engageable with a wrench.” The specification then provides, on pp. 5, ll. 20-21, that “the wrench-engaging end 14[] of tool 10[] is adapted to receive a torque-delivering member,” and on p. 5, ll. 23-26, that “the wrench-engaging end 14[] may be formed in any shape, such as flats, *sockets*, or the like, adapted to receive a torque-delivering member, such as, but not limited to, hexagonal, square, or the like.” (Emphasis added.) Thus, the claimed tool should have the capacity or length to matingly engage a portion of such a torque delivering member in the socket of the tool’s wrench-engaging end 14 as described, while the same tool matingly engages, on its plug receiving end 12 that is opposed to its wrench-engaging end 14, a portion of the body of a spark plug that is adjacent the damaged wrench-engaging member 32 of the spark plug. Where such a damaged wrench-engaging member 32 is not broken off altogether, the spark plug would retain its overall length and, more specifically, the entire distance between the electrical connector end 28 and a damaged wrench-engaging member 32.

Therefore, and in this instance, the length of the aperture of the claimed tool would need to at least be capable of accommodating the sum of the total distance between the electrical connector end 28 and the damaged wrench-engaging member 32 of the spark plug, *and* the length of the portion of a torque-delivering member that is matingly engaged within the socket of the wrench-engaging end 14 of the tool. Accordingly, the original application discloses a tool including an aperture having a length that must be greater than or equal to the distance between an electrical connector end and a damaged wrench-engaging member of a spark plug.

“If a skilled artisan would have understood the inventor to be in possession of the claimed invention at the time of filing, even if every nuance of the claims is not explicitly described in the specification, then the adequate description requirement is met.” MPEP 2163. The specification, at the time the application was filed, described the invention of claim 1 in sufficient detail that one skilled in the art can reasonably conclude that the inventors had possession of the invention of claim 1. Because the phrase “wherein a length of the aperture in the direction extending from the first end into the body portion is greater than or equal to a distance along the length of the spark plug from the electrical connector end to the damaged wrench-engaging member” in claim 1, ll. 14-16, is adequately supported by the disclosure of the original application and incorporates no new matter, applicant submits that claim 1 does comply with the written description requirement of the first paragraph of 35 U.S.C. § 112. Accordingly, applicant respectfully requests reconsideration and withdrawal of this rejection.

Further, applicant respectfully submits that claim 23 does comply with the written description requirement of the first paragraph of 35 U.S.C. § 112 because the phrase “rotating the torque application device in a second direction opposite the first direction...” in claim 23 is adequately supported by the disclosure of the original application and incorporates no new matter. The specification, at the time the application was filed, described the invention of claim 23 in sufficient detail that one skilled in the art can reasonably conclude that the inventors had possession of the claimed invention.

The application, on p. 5, ll. 20-21, states that “[i]t is to be understood that the wrench-engaging end 14, 14’ of tool 10, 10’ is adapted to receive a torque-delivering member,” and, on p. 5, ll. 9-11, provides for an alternate embodiment of the invention wherein “the tool 10’ is rotationally driven onto the broken plug 11’ to force the ribs 38 to cut into the body 34 of the plug 11’ and create a new gripping surface 24.” The phrase “rotationally driven” does not function to limit the direction of rotation to a single direction, and a skilled artisan would understand that the awareness of the ability to rotate a torque application device in an unspecified first direction necessarily encompasses an awareness of the ability to rotate that same torque application in an opposite direction. As noted above, “[i]f a skilled artisan would have understood the inventor to be in possession of the claimed invention at the time of filing, even if every nuance of the claims is not explicitly described in the specification, then the adequate

description requirement is met.” MPEP 2163. Accordingly, applicant respectfully requests reconsideration and withdrawal of this rejection.

Definiteness of claim language is analyzed, “not in a vacuum, but in light of: (A) [t]he content of the particular application disclosure; (B) [t]he teachings of the prior art; and (C) [t]he claim interpretation that would be given by one possessing the ordinary level of skill in the pertinent art at the time the invention was made.” MPEP 2173.02. Applicant submits that claim 1, by particularly pointing out and distinctly claiming the metes and bounds of subject matter regarded as the invention, does meet the requirement of definiteness under the second paragraph of 35 U.S.C. § 112. Specifically, the phrase “wherein a length of the aperture in the direction extending from the first end into the body portion is greater than or equal to a distance along the length of the spark plug from the electrical connector end to the damaged wrench-engaging member” in claim 1, ll. 14-16, results in a claim scope that can be ascertained by one of ordinary skill in the art. Accordingly, applicant respectfully requests reconsideration and withdrawal of this rejection.

The cited phrase of claim 1 makes reference to spark plugs that find sufficient descriptive support both in the preamble of claim 1 and the original application so as to enable one of ordinary skill in the art to ascertain their scope. Claim 1’s preamble, in ll. 1-5, manifests that the invention is directed to “[a] tool for removing a damaged spark plug, the damaged spark plug having an electrode end, and electrical connector end, an insulator, a damaged wrench-engaging member disposed about the insulator and a body.” The Background of the Invention section of the application, on p. 1, ll. 3-5, introduces the invention as “relat[ing] generally to spark[] plugs, and more particularly to the removal of damaged spark[] plugs from a cylinder head in an engine.” The spark plugs to which the invention relates are further described by the application in the Summary of the Invention section, p. 2, ll. 5-12, and in the description, p. 4, ll. 6-24. Additionally, Figures 5 and 6 of the application provide depictions of some plugs to which the invention relates.

The application, conveying the breadth of the claimed invention, expresses, on pp. 5-6, ll. 29-4, that “the tool [of the invention] may be made in various sizes to adapt to the confined spaces encountered in various cylinder head/spark [] plug configurations,” and that

such tools of various sizes and/or shapes would be “particularly useful to one who regularly works on a variety of cars, such as professional auto mechanic, or the like.” Claiming a range of embodiments is permissible under the definiteness standard of the second paragraph of 35 U.S.C. § 112. As the MPEP elucidates, “[b]readth of a claim is not to be equated with indefiniteness.” 2173.04 (quoting *In re Miller*, 441 F.2d 689 (CCPA 1971)). “If the scope of the subject matter embraced by the claims is clear, and if applicants have not otherwise indicated that they intend the invention to be of a scope different from that defined in the claims, then the claims comply with 35 U.S.C. § 112, second paragraph.” *Id.*

While it is certainly true that the lengths of the types of spark plugs to which the invention relates can and do vary, “[t]he fact that claim language, including terms of degree, may not be precise, does not automatically render the claim indefinite under 35 U.S.C. § 112, second paragraph.” MPEP 2173.05(b) (citing *Seattle Box Co., v. Industrial Crating & Packing, Inc.*, 731 F.2d 818 (Fed. Cir. 1984)). The acceptability of relative claim terminology under the definiteness standard depends on whether one of ordinary skill in the art would understand what is claimed, in light of the specification. *Id.* As noted above, the application makes it clear that the invention relates to a tool for use on various cylinder spark plug configurations. Certainly, one skilled in the art would be familiar with the degree of variation among cylinder spark plug configurations and would thus be able to ascertain the scope of the tool of the invention based on this range.

A rejection of a claim for indefiniteness under 35 U.S.C. § 112, second paragraph based on a reference in the claim to an object that is variable is appropriate when the relationship provided for in the claim is not based on any known measurement standard. *Id.* The cited language of claim 1, however, apprises one skilled in the art with a degree of measurement that can be readily determined by the available knowledge of lengths of spark plugs used in engine cylinder heads. The measurement limitation of claim 1 is similar to the claim limitation that was at issue in *Orthokinetics, Inc. v. Safety Travel Chairs, Inc.*, 806 F.2d 1565 (Fed. Cir. 1986), in which claim language specified that a certain part of a pediatric wheelchair be “so dimensioned as to be insertable through the space between the doorframe of an automobile and one of the seats.” Holding this claim language to be definite, the court found the phrase “so dimensioned” to be as accurate as was permitted by the subject matter and noted that the second paragraph of

35 U.S.C. § 112 does not require that all possible lengths corresponding to the spaces in hundreds of different automobiles be listed in the patent, let alone in the claims. *Id.* at 1576. Analogously, the description of the length of the tool of the invention in claim 1 sufficiently defines the subject matter of the invention in the written description and figures of the original application disclosure, and particularly in the description provided in the preamble of claim 1. Because the definiteness standard does not require that all possible lengths corresponding to all possible spark plugs used in different automobile engine cylinder heads be listed in a patent, applicant respectfully submits that claim 1 does comply with 35 U.S.C. § 112, second paragraph, and therefore requests withdrawal of this rejection.

Additionally, applicant submits that claim 23, by particularly pointing out and distinctly claiming the metes and bounds of subject matter regarded as the invention, does meet the requirement of definiteness under the second paragraph of 35 U.S.C. § 112. Specifically, the phrase “rotating the torque application device in a second direction opposite the first direction” in claim 23, ll. 2-3, results in a claim scope that can be ascertained by one of ordinary skill in the art. Accordingly, applicant respectfully requests reconsideration and withdrawal of this rejection.

The cited phrase resulted in a rejection of claim 23 on the ground that the specified action of rotating the device in a first direction and then in a second direction does not clearly provide for the removal and engagement of the spark plug. Claim 23, however, further provides that such rotation acts “to further engage the interior surface of the tool into an exterior surface of the body of the damaged spark plug.” The original application explains how this result acts to aid in the removal of a damaged spark plug. Specifically, the application, on p. 4, ll. 26-30, and on p. 5, ll. 13-60, makes it clear that as the tool of the invention is driven onto the body of the broken plug, the tool’s action of cutting into the plug’s body acts to create a gripping surface, and that once this gripping surface is created, a rotational force may be applied to the wrench-engaging end of the tool so as to unscrew the plug from the engine cylinder head. The application, on p. 5, ll. 20-21, further provides that the wrench-engaging end is adapted to receive a torque-delivering member. It is thus apparent that the scope of the cited language of claim 23 encompasses rotation of the torque-delivering member in a second direction that acts to increase the gripping surface between the tool and the plug’s body, and that such action, by

increasing the gripping surface, permits a rotational force to be applied to the wrench-engaging end of the tool so as to unscrew the plug from an engine cylinder head. Therefore, applicant respectfully submits that the cited phrase of claim 23, when read in the light of the remaining claim language and the original application, is sufficient to apprise one of ordinary skill in the art of its scope and to comply with 35 U.S.C. § 112, second paragraph.

Claim 23 was rejected as failing to comply with the enablement requirement of 35 U.S.C. § 112, first paragraph. Applicant respectfully submits that claim 23 does comply with the enablement requirement and requests reconsideration and withdrawal of this rejection. The information contained in the application's original specification and drawings is sufficient to inform those skilled in the relevant art how to both make and use the method of claim 23 without undue experimentation.

The structure that allows the method claimed is expressly provided for in the preamble of claim 22 (upon which claim 23 is dependent) as "the aperture defining an interior surface configured to engage a portion of the body of the damaged spark plug adjacent the damaged wrench-engaging member." Further, the original disclosure describes how the method of claim 23 provides for the removal and engagement of the spark plug. According to claim 23, the claimed step of rotation acts "to further engage the interior surface of the tool into an exterior surface of the body of the damaged spark plug," and the application explains how this result aids in the removal of a damaged spark plug. The application, on p. 4, ll. 26-30, and on p. 5, ll. 13-60, discloses that, as the tool of the invention is driven onto the body of the broken plug, the tool's action of cutting into the plug's body acts to create a gripping surface, and that once this gripping surface is created, a rotational force may be applied to the wrench-engaging end of the tool so as to unscrew the plug from the engine cylinder head. The application, on p. 5, ll. 20-21, further specifies that the wrench-engaging end is adapted to receive a torque-delivering member. It is thus apparent that the rotation of claim 23 in opposite directions operates to increase the gripping surface between the tool and the plug's body, and that such action, by increasing the gripping surface, permits a rotational force to be applied to the wrench-engaging end of the tool so as to unscrew the plug from an engine cylinder head.

The rotation applied in claim 23 is described generally in the application on pp. 5-6, ll. 30-2, as “a rotational force [] applied to the wrench-engaging end 14 tool 10 (which end is opposed to plug receiving end 12) so as to unscrew the plug 11 from the engine.” Therefore, since the stated limitation of claim 23 is clearly supported by the original disclosure, and in and of itself is sufficient enable one skilled in the art to make and use the claim containing that limitation, applicant respectfully submits that claim 23 complies with the enablement requirement of 35 U.S.C. § 112, first paragraph.

§ 102(b) Rejections

Claims 1, 20, and 21 were rejected as being anticipated by McLellan under 35 U.S.C. § 102(b), under which “[t]he identical invention must be shown in as complete detail as is contained in the...claim” for anticipation to be present. *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236 (Fed. Cir. 1989). More particularly, under 35 U.S.C. § 102, “[a] claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference.” *Verdegaal Bros. V. Union Oil Co. of California*, 814 F.2d 628, 631 (Fed. Cir. 1987).

Accordingly, applicant respectfully submits that the McLellan reference does not anticipate claims 1, 20, and 21. The reference fails to show the aperture defining an interior surface configured to engage a portion of the body of a spark plug adjacent the damaged wrench-engaging member recited in claim 1. This element is not shown in the reference because the reference fails to describe a length of the aperture in the first direction as being greater than or equal to a distance from the electrical connector end to the damaged wrench-engaging member. Because claims 20 and 21 depend from either directly or indirectly from claim 1, applicant submits that the McLellan reference does not anticipate claims 20 and 21 for at least the same reasons as it does not anticipate claim 1. Moreover, concerning claim 20, the McLellan reference fails to show a spline portion configured to be driven onto the body of the damaged spark plug on the interior surface of the aperture. Concerning claim 21, the McLellan reference fails to show a second end configured to receive a torque application device. Therefore, applicant respectfully submits that claims 1, 20, and 21 are patentable over the McLellan reference, and requests reconsideration and withdrawal of this rejection.

Claims 1 and 17-21 were rejected as being anticipated by Hildebrand under 35 U.S.C. § 102(b). Applicant respectfully submits that the Hildebrand reference does not anticipate claims 1 and 17-21, as the reference fails to show the aperture defining an interior surface configured to engage a portion of the body of a spark plug adjacent the damaged wrench-engaging member recited in claim 1. This element is not shown in the reference because the reference fails to describe a length of the aperture in the first direction as being greater than or equal to a distance from the electrical connector end to the damaged wrench-engaging member. Because claims 17-21 depend from either directly or indirectly from claim 1, applicant submits that the Hildebrand reference does not anticipate claims 17-21 for at least the same reasons as it does not anticipate claim 1. Moreover, concerning claim 20, the Hildebrand reference fails to show a spline portion configured to be driven onto the body of the damaged spark plug on the interior surface of the aperture. Therefore, applicant respectfully submits that claims 1 and 17-21 are patentable over the Hildebrand reference, and requests reconsideration and withdrawal of this rejection.

§ 103(a) Rejection

Claim 22 was rejected under 35 U.S.C. § 103(a) as being unpatentable over McLellan or Hildebrand in view of Vasichек et al. A proper obviousness rejection requires establishing that all elements of the invention are disclosed in the prior art; that the prior art relied upon, coupled with knowledge generally available in the art at the time of the invention, contains some suggestion or incentive that would have motivated the skilled artisan to modify a reference or combined references; and that the proposed modification of the prior art have had a reasonable expectation of success, as determined from the vantage point of the skilled artisan at the time the invention was made. *In re Fine*, 5 U.S.P.Q.2d 1596, 1598 (Fed. Cir. 1988); *In Re Wilson*, 165 U.S.P.Q. 494, 496 (C.C.P.A. 1970).

Accordingly, the Vasichек et al. reference alone or in combination with the other cited references fails to teach or suggest all of the limitations of claim 22. Neither Vasichек et al. alone, nor in combination with either McLellan or Hildebrand, teach or suggests disposing a tool, the tool having an aperture defining an interior surface configured to engage a portion of the body of a damaged spark plug adjacent a damaged wrench-engaging member of the spark plug, proximate the spark plug such that the interior surface of the tool contacts the body of the

damaged spark plug adjacent the damaged wrench-engaging member. Accordingly, applicant respectfully submits that claim 22 is patentable over Vasichok et al, and requests reconsideration and withdrawal of this rejection.

CONCLUSION

For all the above reasons, applicant respectfully submits that the claims are now in proper form, and that the claims all define patentably over the prior art. Therefore, applicant submits that this application is now in condition for allowance. Such action is most earnestly solicited. If for any reason the Examiner feels that consultation with Applicants' attorney would be helpful in the advancement of the prosecution, the Examiner is invited to call the telephone number below for an interview.

If there are any charges due with respect to this Amendment or otherwise, please charge them to Deposit Account No. 06-1130, maintained by the applicant's attorney.

Respectfully submitted,

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